

REMARKS

Applicant has amended claims 1, 5 and 6, and cancelled claims 17-20 during instant prosecution of this patent application. Applicant is not conceding in this patent application that the original claims, previously cancelled claims, cancelled claims, and previously withdrawn claims are not patentable over the art cited by the Examiner, since the claim amendments are only for facilitating expeditious prosecution of this patent application. Applicant respectfully reserves the right to pursue the original claims, and other claims, in one or more continuations and/or divisional patent applications.

The Examiner rejected claims 1, 4-8, 17, and 18-20 under 35 U.S.C. § 112, 1st ¶ as failing to comply with the enablement requirement.

The Examiner rejected claims 1, 4-8, 17, and 18-20 under 35 U.S.C. § 112, 1st ¶ as failing to comply with the written description requirement.

The Examiner rejected claims 1, 4-8, and 17-20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dardik (U.S. Patent No. 6,702,720) in view of Yoshida et al. (Non-Patent Literature) in view of Kindermann et al. (Non-Patent Literature) and further in view of Anderson et al. (U.S. Patent No. 4,463,764) and further in view of (U.S. Patent No. 6,702,720).

35 U.S.C. § 112, 1st ¶

The Examiner rejected claims 1, 4-8, 17, and 18-20 under 35 U.S.C. § 112, 1st ¶ as failing to comply with the enablement requirement.

Based on the amendments to the claims, Applicant respectfully requests reconsideration and removal of the § 112, 1st ¶ rejection.

The Examiner rejected claims 1, 4-8, 17, and 18-20 under 35 U.S.C. § 112, 1st ¶ as failing to comply with the written description requirement.

Applicant respectfully contends that the specification, as originally filed, provides a teaching of repeating the method and recalculating a point of efficiency. Applicant would like to draw the Examiner's attention to the support provided in the specification. In particular, page 18 of the specification discloses:

The subject 18 is further trained by *repeating steps* 96 through 112 of FIG. 5. Over a period of time, the subject 18 is able to produce a specific level of performance over an improved period of time. As the subject 18 trains and builds up more capacity, the point of efficiency 70A moves to longer and longer lengths of times 74 as illustrated in point of efficiencies 70E, and 70F (FIG. 3). The subject 18 may also be able to run longer in inefficiency and longer overall. (emphasis added)

Therefore, based on the provided support in the specification and the amendments to the claims, Applicant respectfully requests reconsideration and removal of the rejection based on a lack of written description.

35 U.S.C. § 103

The Examiner rejected claims 1, 4-8, and 17-20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Dardik (U.S. Patent No. 6,702,720) in view of Yoshida et al. (Non-Patent Literature) in view of Kindermann et al. (Non-Patent Literature) and further in view of Anderson et al. (U.S. Patent No. 4,463,764) and further in view of (U.S. Patent No. 6,702,720).

Applicant respectfully contends that claim 1 is not obvious and unpatentable over Dardik in view of Yoshida et al. and further in view of Anderson et al. because the combination of the cited references fails to teach each and every element of the claim limitations. For example, the combination of cited references fails to teach:

“providing a performance system, measuring an initial measurement of a first parameter of a trainable subject, providing a control system for controlling a second parameter, wherein the second parameter is a parameter of the performance system, determining a range of tolerance, using the control system, surrounding the initial measurement, starting a timer to measure an elapsed time of a given activity, training the trainable subject within the range of tolerance of the initial measurement, determining, using the control system, for the given activity, the point of efficiency of the trainable subject by measuring the first measured parameter of the trainable subject, the point of efficiency being the maximum value of the second parameter whereby a state of accommodation is maintained with respect to the first parameter, wherein the point of efficiency is determined by repeatedly increasing stress on the trainable subject by controlling the second parameter and then measuring a current measurement of the first parameter of the trainable subject, the current measurement measured after the

initial measurement and before the timer is stopped, until just prior to the trainable subject no longer being able to accommodate additional stress and entering a state of inefficiency or exhaustion causing the first parameter to vary, wherein a rate of the variance of the first parameter at least one of increases and decreases with respect to the second parameter, stopping the timer, using the control system, when the current measurement of the first parameter is outside of the range of tolerance, recording a length of time in which the trainable subject remained in the state of accommodation until the current measurement of the first parameter is outside the range of tolerance, and *repeating the method of training the trainable subject using the performance system so the maximum value of the second parameter at least one of increases and decreases each repetition of the method such that the point of efficiency is increased to further new points of efficiency.*" (emphasis added)

In contrast with the claim limitations, Yoshida et al. teach endurance training based upon the intensity as determined by the arterial blood lactate concentration of $4 \text{ mmol} \cdot \text{l}^{-1}$; therefore, the blood lactate concentration of $4 \text{ mmol} \cdot \text{l}^{-1}$ should stay the same. Here, when the subject trains to further new points of efficiency, the values of the first parameter increase (or decrease); the value of the first parameter changes while Yoshida et al. teaches a constant physical parameter of the subject. Thus, Yoshida et al. actually teach away from training the subject to achieve a change in value of the first parameter, such as lactic acid concentration, point of efficiency.

Additionally, one having ordinary skill in the art would not be motivated to combine Yoshida et al. with Dardik and Kindermann. Yoshida et al. Kindermann et al. teach that a

training regimen with a constant intensity, in particular, arterial blood lactate concentration of $4 \text{ mmol} \cdot \text{l}^{-1}$, is a better measure of the optimal workload intensity for the improvement of cardiorespiratory functions (*i.e.* the optimal training level for endurance). Thus, Yoshida et al. and Kindermann et al. teach training at a particular level of intensity to achieve optimal results, as opposed to exercising just prior to exhaustion. The Examiner asserts that it would have been obvious to combine the teachings of Yoshida et al. Kindermann et al. with the teachings of Dardik. According to the Examiner, Dardik teach repeatedly providing additional stress to the subject until said point of efficiency occurring just prior to the subject no longer being able to accommodate additional stress and entering a state of inefficiency or exhaustion (*e.g.* inducing periods of ischemia). In contrast, Kindermann et al. disclose increasing the speed of a treadmill by 2 km/hr every 3 minutes only to reach a target blood lactate level of 4 mmol/l ; Kindermann et al. do not teach increasing the speed of the treadmill until just prior to exhaustion. If Kindermann et al. increased the speed of the treadmill to the point of exhaustion, the target blood lactate level would be irrelevant to the training. According to the heart of Kindermann et al., training is optimal at an intensity consonant with a blood lactate concentration of 4 mmol/l . Therefore, one having ordinary skill in the art would simply not be motivated to combine the teachings of Yoshida et al. and Kindermann et al. with the teachings of Dardik. Applicant respectfully contends that these are two very different strategies and theories on improving endurance, and combining the cited references would destroy the very principle of the training regimen.

Furthermore, the combination of the cited references fails to teach Contrary to the claim limitations, the combination of the cited references fail to teach *repeating the method...wherein the maximum value of the second parameter at least one of increases and decreases each*

repetition of the given activity such that the point of efficiency is increased to further new points of efficiency. In particular, Yoshida et al. state, “[t]raining was performed on a Monark bicycle ergometer for 15 min on 3 days/week for 8 weeks.” (page 225) However, the participants in the training regime taught by Yoshida et al. exercise on the Monark bike for the same amount of time (*i.e.* 15 minutes) every repetition. In stark contrast with the claim limitations, Yoshida et al. teaches that the elapsed time for training on a Monark bicycle remains constant (*e.g.* 15 minutes), which is the exact opposite of the claim 1. The time the subject trains is not constant; it changes each repetition of the method based on the subject training within the range of tolerance surrounding the physical parameter of the subject for an elapsed time at a varying value of the second parameter (*e.g.* increasing speed of treadmill). Thus, each time the control system trains the subject, *the recorded length of time between the starting and the stopping of the timer will change (*e.g.* increase)* In other words, the length of time the trainable subject remains in a state of accommodation will change (*e.g.* increase or decrease). Because Yoshida et al. teaches that the elapsed time for training on a Monark bicycle remains a constant (*e.g.* 15 minutes), a recalculation or change to the point of efficiency is prevented; the point of efficiency inherently requires a change in the overall elapsed time (*i.e.* from start to finish). Therefore, Yoshida et al. does not teach a recalculation or a change to the point of efficiency due to the fixed length of time of the training regime. Accordingly, Applicant contends that the combination of the references fail to teach each and every element of the claim 1.

Lastly, Applicant would like to draw the Examiner’s attention to the support for the limitation “the maximum value of the second parameter at least one of increases and decreases each repetition of the given activity.” Because the second parameter may be the speed of the treadmill, the maximum value of the speed of the treadmill just prior to the subject entering a

state of inefficiency may increase or decrease each repetition of the method, depending on the subject's performance that iteration of the method. Moreover, the goal of the subject may be either to increase the value of the second parameter or decrease the value of the second parameter, depending on what the second parameter measures. For an example of increase, the specification discloses:

“As the subject 18 trains, the point of efficiency 70 moves to higher and higher speeds as illustrated in the point of efficiencies 70C, and 70D (FIG. 2A). Thus, the point of efficiency 70 is the maximum value of, in the case of FIG. 2A, the speed of the treadmill whereby the state of accommodation is maintained.” (page 13)

For an example of decrease, the specification discloses:

“Alternatively, the subject 18 can also train and build up more capacity, but due to the particular activity can shorten length of time 74 that the point of efficiency 70A is reached. For example, with weight lifting (e.g., twenty repetitions at a particular weight), the point of efficiency 70A is shortened through the use of the method.” (page 19)

Based on the amendments to the claims and the accompanying arguments, Applicant respectfully requests reconsideration and removal of the obviousness rejection.

CONCLUSION

Based on the preceding arguments, Applicant respectfully believes that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicant invites the Examiner to contact Applicant's representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account 19-0513.

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